ORDER FOR SUPPLIES OR SERVICES

PAGE 1 OF PAGES 1

IMPORTANT: Mark all packages and papers with contract and/or order numbers.

1. DATE OF ORDER	2. CONTRACT NO. (If any)	3. ORDER NO.	4. REQUISITION/REFERENCE NO.
April 10, 1987		7Y0530GGBX	PO-135 PE0261

5. ISSUING OFFICE (Address correspondence to)
U.S. Environmental Protection AGency
1200 Sixth Avenue MD-105
Seattle, WA 98101-3188

6. SHIP TO: (Consignee and address, ZIP Code)
U.S. Environmental Protection AGency
1200 Sixth Avenue ES-098
Seattle, WA 98101-3188
ATTN: Matta, Mike
SHIP VIA:

LDWSF
12.3.55 v1
04/10/87

7. TO: CONTRACTOR (Name, address and ZIP Code)
Auke Bay Laboratory
National Oceanic and Atmospheric Adminstration
P.O. Box 210155
Auke Bay, Alaska 99821
ATTN: Dr. Jeff Short

8. TYPE OF ORDER
[X] A. PURCHASE — Reference your _____
Please furnish the following on the terms and conditions specified on both sides of this order and on the attached sheets, if any, including delivery as indicated. This purchase is negotiated under authority of:
[ ] B. DELIVERY — Except for billing instructions on the reverse, this delivery order is subject to instructions contained on this side only of this form and is issued subject to the terms and conditions of the above-numbered contract.

9. ACCOUNTING AND APPROPRIATION DATA
6870200 PE0261 7A4E10P00C 25.32 $750.00

10. REQUISITIONING OFFICE
U.S. EPA Region 10

11. BUSINESS CLASSIFICATION (Check appropriate box(es))
[ ] SMALL [X] OTHER THAN SMALL [ ] DISADVANTAGED [ ] WOMEN-OWNED

12. F.O.B. POINT	14. GOVERNMENT B/L NO.	15. DELIVER TO F.O.B. POINT ON OR BEFORE (Date)	16. DISCOUNT TERMS
Destination		June 17, 1987	Net 30

13. PLACE OF INSPECTION AND ACCEPTANCE

17. SCHEDULE (See reverse for Rejections)

ITEM NO. (A)	SUPPLIES OR SERVICES (B)	QUANTITY ORDERED (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)	QUANTITY ACCEPTED (G)
1	Analyses of sediment samples for Organotins. (Marine Power & Equip.) NOTE: Watson will contact lab. Dr. Snyder should be contacted by phone prior to sending samples. Dr. Jeff Short is chemist who will run s samples. Telephone (907) 789-6065	6	ea	125.00	$ 750.00	

USEPA SF
1345248

18. SHIPPING POINT	19. GROSS SHIPPING WEIGHT	20. INVOICE NO.		17(H). TOT. (Cont. pages)

SEE BILLING INSTRUCTIONS ON REVERSE

21. MAIL INVOICE TO: (Include ZIP Code)
U.S. Environmental Protection Agency, 1200 Sixth Avenue,M MD-109, Seattle, WA 98101-3188 ATTN: Gary Hansen

$ 750.00 — 17(I). GRAND TOTAL

22. UNITED STATES OF AMERICA BY (Signature) Brenda L. Mirasol

23. NAME (Typed)
Brenda L. Mirasol
TITLE: CONTRACTING/ORDERING OFFICER

(Shaded areas are for use of procurement office only) Page of

US Environmental Protection Agency
Washington, DC 20460

EPA **Procurement Request/Order**

1. Name of Originator	2. Date of Requisition
Michael Watson PO135	3/12/87
3. Mail Code	**4. Telephone Number**	**5. Date Item Required**
ES-098	(206) 442-1072	ASAP

6. Signature of Originator: Michael Watson

7. Recommended Procurement Method: ☐ Competitive ☐ Other than full and open competition ☒ Sole source small purchase

8. Deliver To *(Project Manager)*	9. Address	10. Mail Code	11. Telephone Number
Matta/Boys - EPA - 1200	- Sixth Ave. Seattle, Wa. 98101	ES-098	442-1072

12. Financial Data
(a) Appropriation 6870200

NOTE: Item 12 (c) Document Type—Contract = "C," Purchase Order = "P," IGA = "A," Other *(Misc.)* = "X"

FMO Use (b) *(13 digits)*	DT (c)	Document Control Number (d) *(6 digits)*	Account Number (e) *(10 digits)*	Object Class (f) *(4 digits)*	Amount (g) Dollars	Cents
		PE0261	7A4E10P00C	2532	750	00

13. Suggested Source *(Name, Address, ZIP Code, Phone/Contact)*
6000
Dr. George Snyder, Director - Auke Bay Lab.
NMFS, NOAA
P.O. Box 210155, Auke Bay, Alaska 99821
(907) 789-6065

14. Amount of money committed is:
☒ Original
☐ Increase
☐ Decrease

15. Contracting office is authorized to exceed amount shown by 10%
☒ Yes ☐ No

16. Servicing Finance Office Number
10

17. Approvals

a. Branch/Office: William P. Schmitt, Chief, Fld.Ops.& Tech.Sup.Br.	Date 4/1/87	d. Property Management Officer/Designee	Date 4-3-87
b. Division/Office: Director, Env. Svcs. Div.	Date 2APR87	e. Other *(Specify)* Joseph R. Meurk	Date 3Apr87
c. Funds listed above are available and reserved: Mary A. Moore	Date 4/2/87	f. Other *(Specify)*	Date

18. Date of Order	19. Order Number	20. Contract Number *(if any)*	21. Discount Terms

22. FOB Point	23. Delivery to FOB Point by *On or before (Date)*	24. Person Taking Order/Quote and Phone No.

25. Contractor *(Name, address, ZIP Code)*

26. Type of Order
☐ a. Purchase

Reference your quote *(See block 24)*

Please furnish the above on the terms specified on both sides of this order and on the attached sheets, if any, including delivery as indicated.

☐ b. Delivery provisions on the reverse are deleted. The delivery order is subject to the terms and conditions of the contract. *(See Block 20)*

c. ☐ Oral ☐ Written ☒ Confirming

27. Schedule

Item Number (a)	Supplies or Services (b)	Quantity Ordered (c)	Unit (d)	Estimated Unit Price (e)	Unit Price (f)	Amount (g)	Quantity Accepted (h)
1.	Analyses of sediment samples for Organotins. (Marine Power & Equip. NOTE: Watson will contact lab. Dr. Snyder should be contacted by phone prior to sending samples. Dr. Jeff Short is chemist who will run samples. Telephone (907) 789-6065	6	ea.	125.00			
					Total $		

28. United States of America By *(Signature)*	29. Typed Name and Title of Contracting Officer

EPA Form 1900-8 (Rev. 4-85) Previous editions are obsolete.

COPY 1 -- PROCUREMENT FILE/CONTRACTING OFFICER

4-1-87

The scope of work for this purchase order will be for the NOAA Auke Bay Laboratory to perform detailed chemical analyses for the presence and speciation of organotin compounds. At present, EPA's Manchester Laboratory is not fully equipped and geared up to perform this type of analysis. This work will be performed on six (6) samples of sediment obtained in the course of EPA Region 10's Marine Power and Equipment investigation(s). Three of the samples are sediment from the Lake Union facility of Marine Power and Equipment, and three are from their facility on the lower Duwamish River. Each of the six samples is a composite of three subsamples taken by VanVeen grab sampler. All samples were taken specifically for organotin analysis, and have been maintained in frozen condition at the EPA Manchester Laboratory since their collection earlier this year. It is our understanding that this analysis will provide accurate information about the type and quantities of various organotin compounds which may be present in the samples, and the cost will be approximately $125 per sample.

January 8, 1987

M/S 329

Possibility of Analyzing Organo-Tin at NOAA's Auke Bay Laboratory

Michael Watson, Regional Toxicologist
Field Operations & Technical Support Branch

William P. Schmidt, Chief,
Field Operations and Technical Support Branch

On 7 January, 1987, I telephoned NOAA's Auke Bay Laboratory near Juneau, Alaska, and discussed the general issue of organotins in fish tissue and sediment samples with Dr. Jeff Short. Telephone for Dr. Short is (907) 789-6065. Dr. Short and Dr. Frank Thrower of the Auke Bay lab have recently published a paper entitled "Accumulation of butyltins in muscle tissue of chinook salmon reared in sea pens treated with tri-n-butyltin". This paper was presented at the IEEE OCEANS '86 Conference in Washington, D.C., September 23-25, 1986. They are also preparing an upcoming paper on a screening method for organotins in fish muscle. Dr. Short related the following very interesting facts:

1. The equipment and instrumentation necessary to accurately analyze organotins has cost the Auke Bay lab in the vicinity of 80-90 thousand dollars. This is because the lab uses a procedure which involves "mating" an atomic absorption (AA) detector with a gas chromatograph (GC). This union took them about eight months to successfully design and implement, because a certain amount of trial and error is required to compliment the undeniable skill required for the splicing. The concept for using the AA/GC combination was originated by Dr. Jim McGuire of Environment Canada, who pioneered Canada's efforts at analyzing organotins in marine samples. Dr. Short feels that the AA/GC method, despite its difficulties, is the best method by far, although one could also use a flame photometric detector with the GC instead of utilizing AA as the detector.

2. The best source of information regarding state-of-the-art extraction and analysis methods for organotins is Volume 4 of the Proceedings from the OCEANS '86 conference referenced above. I would recommend that the Region 10 laboratory acquire this volume for future references. Other pioneers in the field of organotin analysis in marine samples include: (a) Dr. Ed D. Goldberg, Scripps Institution of Oceanography, La Jolla, CA 92043, telephone ((619) 534-2407, and (b) Dr. Robert J. Huggett, Virginia Institute of Marine Science, College of William and Mary, Gloucester Pt., VA 23062, telephone (804) 642-7236.

3. The Auke Bay laboratory has recently sampled the common mussel, Mytilus edulus, from several locations along the Pacific coast, including several sites in Puget Sound. According to Dr. Short, mussels from Puget Sound (especially from the area around the Duwamish) contain significantly high levels of organotin. These samples are currently being analyzed, and the study is not yet completed. He will send me the data when they become available.

4. (saving the best news for last) The Auke Bay laboratory is interested in any contractual arrangements which EPA or others may wish to consider regarding analysis of marine samples for organotins. Two levels of analysis are available. For $25 per sample, we would receive a screening analysis which will tell us whether or not organically bound tin is present, and a rough estimate of quantity. For about $125 per sample, the lab will provide us with an AA/GC confirmation of each species of organotin present, with much greater quantitative accuracy. He suggests that samples be screened first with the cheaper method, and any positive samples then be analyzed in greater detail by the AA/GC method. I should also mention that NOAA is apparently cutting back funding for most of their laboratories. Facilities such as Auke Bay, Montlake and similar labs are thus very interested in soliciting outside funding via contractual arrangements.

I suggest that someone from our laboratory contact Dr. Short and explore mutual interests. If tributyl tin samples (Marine Power sediments, edible resource monitoring in Puget Sound, etc.) could be contracted out on a very limited initial basis, it would give us time to better explore the feasibility of gearing up internally for this complex analytical method over the long run.

cc: Mike Johnston
Bob Rieck
Roy Arp
Kathy Krueger
Dave Terpening
Steve Brown
Dave Tetta
Dave Heineck

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